

Minutes of the 5th TD/BD Coordination Meeting

17 September 2003

Present: Roger Dixon, Victor Yarba, Jim Kerby (scribe), Paul Czarapata, Hank Glass,
Dave Harding, Giorgio Apollinari, Rich Stanek, Gregg Kobliska

Wednesday, 17 September 2003 10:00 AM
The Hermitage - Industrial Center Building, 2 East videoconference room

Agenda: We used the same list as the previous meeting and ran down with answers on each as much as possible.

Pending issues from last meeting:

- Are adequate technicians available for shutdown work?
- When will second Booster dogleg extraction area be modified?
- Electron cooling vacuum - What is status?
- How much can be done on electron cooling magnetic shielding without tunnel measurements?
- How much can be done on Recycler magnetic shielding without tunnel measurements?
- Proton Driver R&D - prototype 2nd harmonic choke. OK?
- Do we need a spare sextupole to replace Accumulator skew sextupole?

Planning for FY04 -

Jobs continuing from FY03

- -Build Booster extraction septum magnets
- -Measure Booster gradient magnets (AC)
- -Build spare IQC/IQD
- -Study Linac PA tubes
- -Build spare Accumulator trim dipoles (NDA)
- -Support Recycler flying wire development
- -Study Tev RF structures
- -Rebuild two Tevatron D spools
- -Study Tevatron magnets
- -Study electrostatic separator issues

Jobs just starting, or to start after shutdown

- Study wire compensation system
- Design and build prototype second harmonic choke
- Procure long ceramic beam tubes
- Design, prototype, and fabricate electron cooling return beam line
- Assist in design, test, and implementation of Recycler magnetic shielding in NuMI region
- Design and fabricate new vacuum system and magnetic shielding for electron cooling solenoids
- Design a magnetic reference system for Tevatron
- Build four spare ILA magnets FMI/Tevatron Lambertsens
- Build or procure replacement coils for LEP corrector dipoles

Jobs discussed at various levels but not approved

- Design and build ORBUMP replacements
- Design and build additional Booster sextupoles

- Design and build new Debuncher injection septum magnet
- Design and build new Debuncher injection, extraction kickers
- Modify LQB magnets as needed to replace D4Q4
- Design and build new Debuncher stochastic cooling tank
- Other undefined AP2/Debuncher aperture work
- Design and build Tevatron IPM magnets
- Build spare SSS/SSN sextupole for Accumulator/Tevatron
- Design and build new electrostatic separators
- Build separator polarity reversing switches
- Build additional Booster dogleg stands and vacuum systems
- Design and build Tevatron electron lens improvements
- Design and build prototype 6.6 T dipole
- Design and build new magnets for C0 intersection region
- Refurbish magnets for CKM beam line
- Design and build new magnets for CKM beam line
- Rebuild 3Q120M magnets
- Design and build larger aperture quadrupole for Main Injector extraction

For the status of various projects see:

http://tdserver1.fnal.gov/Project/JobFiles/Current_Jobs/TD_work_for_BD/TD-BD_JoblistSorted.xls

A copy of this agenda and minutes from previous meetings can be found at

http://tdserver1.fnal.gov/AcceleratorSupport/TD-BD_Meetings/

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The **next meeting** is proposed for

Wednesday, 1 October, 10:00 AM
Location ICB2W (TD Headquarters)

The focus of the meeting was on planning for FY04, and getting some priorities on the “Jobs Discussed at Various Levels..” portion. Items above that on the list can get done, but the cut for what is possible falls somewhere in this last category and knowing what is more important than others is useful....

Onwards...

Pending Issues from Last Meeting

TD Technician Help – the shutdown coverage is OK.

When will the 2nd Booster dogleg extraction be modified – At the next shutdown. The magnets ‘taken out’ this time will be stored in the tunnel to cool off. TD should start planning for the new stands and manifold work needed.

Electron cooling vacuum system – The reorganization of a couple of weeks ago appears to be off to a good start.

Electron cooling return line magnetic shielding – Calculations and measurements are underway. The pertinent technical folk are communication.

Recycler shielding – BD strongly against a power on access to do a field map. An alternative is being explored by BD, where the magnet is better shielded as opposed to

the beam line. BD will need MTF help at some point in future for a measurement if this plan looks feasible.

Prototype 2nd Harmonic Choke – Not a Run II item, can stay under Proton Driver R&D in the Tech Division..

Need for a spare sextupole to replace the accumulator skew sextupole – Yes, it is needed.

Items covered w/ respect to FY04 Planning

Linac PA tubes – BD participating in a meeting in October to make a strategy with the other 3 labs. In the meantime, the plan of having drawings at the end of FY04 is correct.

Polarity Reversing Switches – Yes, though some studies remain to be done. BD (Rod W) has already contacted the vendor mentioned at the review; their switch is physically too large for our installation location.

ORBUMP replacements – Yes, but scope is ill-defined.

AP2 / Debuncher Aperture Related work – High Priority, but BD needs to determine scope.

Tev IPM Magnets – Awaiting review (soon); potentially low priority

New Electrostatic Separators – Awaiting review report

C0 IR – appears to be a real project & moving ahead. TD needs some drawings from BD. [These have now been received.]

6.6T Dipole R&D – Very low priority in FY04. TD leaves on list as reminder this would lower technical risk mentioned when the proposal is raised every 3 years or so.

CKM – awaiting P5 report.

3Q120M Rebuilds – With completion of NuMI needed magnets, TD notes the spares pool is low. Some of the magnets in the rebuild list had internal leaks, for which there are 2 possible fixes. Either swage in a copper tube to the existing tube, or if that doesn't work burn off the epoxy and rebuild with new coils. There was a question if these magnets got this way due to sitting in beam line with water sitting in them—unknown at this meeting. But in the end we need to increase the spares pool.

Large Aperture Quad for Main Injector – As part of the Proton Driver studies, it was noted a new large aperture quad in between the Lambertsons at extraction would allow for more beam. No recent action, and looks to remain that way...

Design a Tevatron reference magnet system -- status -- TD/DT has been asked to prepare a proposal for a reference magnet system for the Tevatron. The first phase would allow playing back several days of actual Tevatron currents at MTF while monitoring the magnetic fields. A second phase might involve an on-line, perhaps even in-line, system. Even the first phase would be a BIG effort in TD/DT. Given the amount of variability in the magnets installed in the Tevatron, TD is skeptical of the utility of either system. BD will review the proposal in late October before moving forward.

Pinger for Main Injector – TD has received a recent request for a pinger (weak kicker) for the Main Injector.

Debuncher Stochastic Cooling Tanks – No.